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AUTHOR	Dowling, M. A. C.
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ABSTRACT

This booklet, which is part of a series of guidelines for national managers of Health Learning Materials projects participating in the World Health Organization's Interregional Health Learning Materials Programme, is intended to help trainers of health personnel recognize and learn to avoid some of the common pitfalls in producing educational materials. Guidelines are provided for developing health-related instructional materials that are relevant, appropriate, usable, accessible, actually used, and adequately evaluated. Concluding the booklet is a series of rules to follow to ensure that instructional materials are both usable and used. (MN)

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PRODUCING HEALTH MATERIALS THAT WORK

M.A.C. Dowling

World Health Organization

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Training and information materials must be specifically designed to meet the needs of a particular target group of health personnel

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Introduction

The severe shortage of relevant and appropriate training materials for health personnel is a barrier to improvement in health care in most developing countries. The quality of any health care depends on the effectiveness of the training given to health staff. Effective training depends, in large part, on the quality of the training materials available to the learner.

Training and information materials must be specifically designed to meet the needs of a particular target group of health personnel. They must be adapted to the local situation and reflect its health problems, the cultural and social environment and the realities of the local health care service.

Such materials must also be designed to suit the level of education, knowledge and skills of the target learners, whether they are undergoing basic training or continuing education.

Teaching and learning materials produced outside a local context are rarely specific enough for the needs of local health staff. They are often written in a foreign language or at an educational level not easily understood by the target readership.

Above all, the information they provide is not directly related to the professional tasks this particular category of health staff will be called upon to perform.

The most effective teaching and learning materials for the health sector are those developed by health professionals with first-hand experience of local health care delivery, who are well-acquainted with the specific learning needs of different categories of health staff.

This document aims to draw the attention of trainers of health personnel to some of the common pitfalls in the production of educational materials and how to avoid them. Above all, it is intended to help authors and editors to produce training and information materials for health staff which really work.

It is essential to fieldtest your material with your target audience

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1. Materials that are not relevant

A common finding in health training school libraries is the **prevalence of imported books**, written for entirely different audiences and unrelated to the real problems of the country. Such books have usually been donated by benevolent agencies and institutions. Being attractively bound, they find pride of place on library shelves although they are never used and are sometimes even in the wrong language. In a large training school in Portuguese-speaking Luanda, Angola, the library consisted of about 100 books, most of which were in English and French. There were not more books in Portuguese because materials in the local language were simply not available.

Far more serious is the equally common phenomenon of **author-oriented** materials. Here, the materials have been prepared and printed locally, but reflect the interests and specialty of the writer rather than the needs of the country and of the user. Books and manuals are produced on an **ad hoc** basis : some are relevant, many are not. In one country, the establishment of an excellent printing press in the Ministry of Health gave rise to a flurry of manuscripts, few of which were relevant to primary health care, but all of which were printed. Like the imported books, many of them rest unused on library shelves.

The solution to this problem lies in the conduct on a national scale of a **needs and resources survey**. This is the logical first step in a country HLM project. The survey sets out to identify the following :

- what materials are already in existence, and how relevant and usable are they?

- what resources, human and physical, are available in the country for the conception and production of materials? and finally

- what are the overall needs for materials in the health and health-related sectors? What priority should be given to their production?

The outcome of the survey (which is described in detail in **Assessment of Needs and Resources** WHO document HRH/90.1) is a priority production schedule for national teaching and learning materials. This helps to ensure that genuine country needs for materials in support to primary health care are met in a realistic and orderly manner.

2. Materials that are not appropriate

The focus here is the user. The **content of the materials** must relate to the knowledge needed and tasks to be performed by the user in carrying out his or her daily work. Subject specialists are not the best people to decide on the content, as they tend to include far more detail than the user requires. Also, they are not always familiar with the background, experience and educational level of the intended user. The resulting materials are therefore inappropriate, even though they may be accurate and up-to-date.

One solution to this problem is that introduced in Zimbabwe by the Essential Drugs Programme, which formed the basis for the national Health Learning Materials (HLM) project. For each technical manual identified as a priority for development, a committee was set up comprising subject specialists, teachers and direct supervisors of the target group, drawn from several provinces. In a workshop setting, the group agreed on the appropriate content, bearing in mind the tasks to be performed and educational level of the user. Suitable authors were then designated and their contributions reviewed by the committee before approval for fieldtesting.

This process helped to ensure that the final product would be appropriate for the target group. At the same time, the involvement of many people from different parts of the country had the effect of promoting the material and increasing the likelihood of its acceptance.

The **educational level** of the user affects his reading skills. It is relatively easy to write a book for a medical student who can handle complex concepts and extract information from pages of solid text. A middle-level health worker cannot learn from such materials, especially when - as is often the case - he is reading in his second language. The same applies to the understanding of "images" - illustrations, graphics, posters - which may convey little or nothing to a low-literate viewer. Catering for the level of comprehension is addressed in more detail below.

The **format of the materials** has to be appropriate to their purpose. Self-instructional modules for distance learning are prepared and presented in a very different form from a training manual for a student. Although the learning of many skills is best achieved through on-the-job training, a good deal can be gained from a video cassette.

Promotional messages for the community are conveyed via the mass media (newspaper articles, radio and TV spots), and through the use of posters and brochures. Material intended for the reference of health workers in the field must have a comprehensive, easy-to-use index. Specific messages for school children and families are, in some cultures, effectively put across through cartoons and fotonovelas. The format has to be adapted to the type of message, its purpose, the local culture and the educational level of the target group.

A local artist working with the national health learning materials project in Ethiopia prepares a poster for the health education of the community

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3. Materials that are not usable

The organization of text, illustration and layout are vital components of a good manual or brochure. People with poor reading skills are intimidated by pages of solid text. The theme needs to be developed logically, with bold headings, and the text broken up frequently by illustrations, boxes and similar devices. Sentences should be as short as possible with simple wording.

Standard tests, such as the Fog Index for language complexity and the Cloze Test for understandability, are useful as guides, but are not infallible. The only real way to be sure that the materials are usable is through **fieldtesting** with the target group. Once this testing has been carried out, the needs and characteristics of the specific group will become much clearer, and future materials can be developed with more confidence.

The introduction of **wordprocessing** and **desktop publishing** has greatly simplified the tasks of writer, illustrator and editor. In spite of this, the ability to create an effective layout is an individual skill. The computer cannot do it for you, it can only facilitate your work as an editor.

Illustration helps to break up the text and to explain concepts. However, the same problem applies to an illustration as to the written word. Those who have difficulty in reading often find it hard to interpret a picture or diagram. Posters and illustrations for brochures thus need to be fieldtested, as do audiovisual materials such as slides and videos. It is important that the artist is directly involved in the testing so that he can understand the audience's difficulties in image recognition, and can try out alternative ideas on the spot.

In HLM training workshops in Rwanda and Zambia, the need was expressed for the writer, artist and editor to work as a team - something which rarely happenned. An artist who understands the real needs of a particular target group is a valuable member of the production team. This is well exemplified in the Ethiopian HLM project where the artists accompany the editors in all fieldtesting exercises.

The above paragraphs underline the continual need for **training** in any HLM project or materials development programme. "How to" manuals provide useful support, but the best results come from training workshops at country and intercountry levels which are organized as part of WHO's HLM programme.

The following workshops for specific skills training took place in the past year:

- **writers and editors of HLM** : intercountry workshops in Arusha, Jakarta and Lusaka. Most country projects conduct their own national workshops, often as a spin-off from the intercountry workshops;

- **microcomputing for HLM production** : intercountry workshops in Cotonou and Nairobi, and national training courses in Ethiopia;

- **artists and designers of HLM** : intercountry workshop in Lusaka;

- **teachers and supervisors**: in effective use of materials and in fieldtesting, in all countries with special mention of Zimbabwe;

- **teachers and writers**: in the development of materials for distance education; an intercountry workshop in Bangkok and in the Sudan. The technique of distance education for continuing education has been too little used in the health sector. This is because teachers do not have the necessary skills to develop self-instructional modules or to plan the integration of distance education into the continuing education programme.

An important spin-off of this intensive training programme is that HLM project staff learn to **operate as a team**. Good examples are the national projects in Bénin and Nepal. Their projects have attained a standard of excellence which enables them to attract contracts from United Nations' agencies and other Ministry programmes for editing, illustration, layout and printing. These projects also develop saleable items such as calendars and greeting cards.

With good cost accounting, they have been able to build up credit in a revolving fund which is used for the purchase of equipment and supplies, to improve premises and provide incentives for project staff. Without good team work, a project cannot achieve its objective of becoming a self-reliant institution in the design and production of HLM.

So far, reference has been made to the situation within individual countries. There has always been a great deal of unnecessary "rediscovery of the wheel", with very similar materials being developed independently in different countries.

The **pooling between countries of information and materials** can do a great deal to speed up the production process and ease the task of authors. One aim of HLM networking is to share fieldtested materials which, with often very little modification, can be used in another country.

A catalogue of HLM produced in national projects has been prepared by the WHO central clearinghouse in Geneva, and circulated to most project managers. This has led to correspondence between managers, and the consequent sharing of materials in hard copy and, where available, on diskette.

Managers of country health learning materials projects, who are all trainers and educators, reviewing a display of teaching and learning materials produced by a number of developing countries in Africa

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4. Materials that are not accessible

There is not much point in talking about usability if the intended user has nothing to use! This sounds obvious, and yet poor distribution of materials has been a major shortcoming in the majority of national HLM projects. In one extreme case, a large number of manuals produced did not find their way beyond the project office. This is essentially a management problem. The solution lies in the **production of sufficient numbers** of materials for all intended users, and the setting up of an **effective distribution system**, so that everyone who needs a copy is assured of receiving it.

For reasons of economy, the print run of the manual should include all estimated requirements for the life span of the text, usually a maximum of four years before revision and a new edition. Two examples from Kenya illustrate this. A manual for environmental health technicians was needed for 2 900 staff in service, and four years' supply for training schools with an annual intake of 180 students in a three-year course. Allowing for a small reserve and the stocking of school libraries, a total of 4 200 manuals was produced for distribution. Similarly, a manual for community enrolled nurses (5 700 in service with an annual training intake of 430 in a 2-year course) was printed in 8 000 copies.

In the majority of countries, distribution of the requisite number of copies is made directly to the training schools. Copies for individual staff in service reach them through the medical stores mechanism, which regularly distributes drugs and medical supplies to all hospitals and health units in the country. There must, however, be a careful follow-up, as this mechanism is not infallible.

In many countries, the staff who most need accurate and up-to-date materials are those who are isolated and stationed in areas difficult to access. Even such remote health posts receive periodic visits from district level supervisors whose collaboration can be solicited. In Tanzania, regular workshops for supervisors, as part of the national continuing education programme, are used as a vehicle for the distribution of HLM for field staff.

5. Materials that are not used

The fact that materials arrive physically within reach of their target does not guarantee their use. There are a number of factors which play a role in ensuring that materials produced are properly used, or used at all.

First, there is a need for **promotion** of products. This can be through the distribution of catalogues, brochures or newsletters giving information on materials available, their content and target readerships. Two national HLM projects which have been particularly successful in this regard are Bénin and Nepal. The Nepal project has even held two book fairs in Kathmandu to sensitize decision makers as well as health staff to the importance of good supporting materials in training and continuing education of the health profession.

The key people who influence the use of materials are teachers and supervicors, and these are the main targets of promotion. As a result, a primary activity in the plan of every national HLM project is to "conduct courses and seminars for teachers in the effective utilisation of HLM". This activity is further strengthened by the **direct involvement of teachers and supervisors** in the development and fieldtesting of textual and visual materials. Teachers do not like to be dictated to over the choice of materials for their courses. If, therefore, they can play an active part in the development and production process, they are more likely to accept the materials and use them effectively.

The example of Zimbabwe has already been mentioned, when teachers and supervisors from different provinces took part in the planning and fieldtesting of materials for the Zimbabwe Essential Drugs Action Programme (ZEDAP). Acceptance by teachers, trainees and staff was very high. At the opposite end of the scale, large numbers of manuals issued to training schools in Mozambique by the Ministry of Health were not used at all. Teachers did not identify with them. They felt that the materials had been imposed on them and resented them.

Finally, the **user** himself may be unfamiliar with reference materials, and will need guidance and instruction in their proper use. If he is a trainee, his teacher will be able to help him. However, the majority of new materials will be distributed directly to staff in the field. This is why it is so important for the draft to be carefully fieldtested with a sample of the target audience.

In this way, difficulties in use can be identified and remedied. Further clarification can be provided by supervisors or through continuing education refresher courses.

Something else which directly concerns the user is the **quality and appearance** of the materials. It is natural for a reader to value more highly a manual which is well presented and attractively bound than a duplicated text with rough or no illustrations. A good product is doubly cost-effective: it will wear well in the field, and it will be used.

Audiovisual instructional materials can play an important role in health personnel training and in the health education of the community

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6. Materials that are not evaluated

The only certain way of ensuring continued improvement in quality and usability of materials of all types is through regular monitoring and evaluation. Most texts become out-of-date and require revision every three or four years. This is not just a matter of updating technical information. The authors of the new editions should benefit from feedback from teachers, supervisors, trainees and field staff. During the course of some years of use, a number of problems will arise; for example, difficulties in understanding certain passages or in use as a quick reference in the field.

This information will not find its way back to the authors automatically. It is only obtained through a planned evaluation, by questionnaires and direct interviews with users. The same procedure applies to audiovisual materials. In Tanzania, the health education department in Dar es Salaam develops and fieldtests locally promotional posters and brochures for use throughout the country. However, there are no peripheral health education staff. There is thus no feedback to the department on how effective the materials are in other provinces, where the culture and behaviour pattern and understanding of health messages differ widely.

A good commercial publishing house ensures the continued high quality - and therefore saleability - of its products through carefully planned evaluation. Why should materials development units in the public sector be any less stringent?

In **conclusion**, if you want to be certain that your materials are **usable** and **used**, follow these simple rules

- make sure your product is needed;
- get to know your target group;
- work as a team;
- test your materials in draft;
- keep everyone informed and involved in what you are producing;
- get the product out to the consumer; and
- keep a check on what happens to it.